



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,213	03/10/2004	Jen-Lin Chao	252011-1990	4165
47390 7590 09/19/2008 THOMAS, KAYDEN, HORSTEMEYER & RISLEY LLP 600 GALLERIA PARKWAY, 15TH FLOOR ATLANTA, GA 30339				
EXAMINER				
KARDOS, NEIL R				
ART UNIT		PAPER NUMBER		
3623				
MAIL DATE		DELIVERY MODE		
09/19/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/797,213

Applicant(s)

CHAO ET AL.

Examiner

Neil R. Kardos

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This is a **NON-FINAL** Office action on the merits in response to communications filed on July 1, 2008. Claims 1, 5, 9, 13, 17, 20, 21, 25, 29, and 32 have been amended. Currently, claims 1-32 are pending and have been examined.

Response to Arguments

2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1-4 and 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 1 and 9: Claims 1 and 9 recite a system comprising a computer readable medium storing program code for execution by a computer. From this recitation, it is not clear whether Applicant is claiming a system or a compute readable medium. See also § 101 rejection below. Examiner is interpreting the claim to be directed to a system comprising software. Examiner notes that Applicant can overcome this rejection and its corresponding § 101 rejection by either directing the claims to a system and adding physical structure (such as a processor) to the claim

language, or by eliminating the system from the claim and directing the claim to a computer readable medium.

Claims 2-4 and 10-12: Dependent claims 2-4 and 10-12 are rejected for failing to remedy the deficiencies of the claims from which they depend.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

Claims 1 and 9: Claims 1 and 9 recite a system comprising a computer readable medium storing program code. A computer readable medium, such as a CD-ROM, is not a system. There is insufficient physical structure recited in the claims to constitute a system. Modules and engines, as recited, could merely be software. Software embodied on a computer-readable medium is not a system. Therefore, the claimed invention does not fall within a statutory class of patentable subject matter.

Claims 5, 13, and 17: Claims 5, 13, and 17 are directed toward the statutory category of a process. In order for a claimed process to be patentable subject matter under 35 U.S.C. § 101, it must either: (1) be tied to another statutory class (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. *See*

Diamond v. Diehr, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972). If neither of these requirements is met by the claim, the method/process is not patentable subject matter under § 101. Thus, to qualify as a statutory process under § 101, the claim should positively recite the other statutory class to which it is tied (e.g. by identifying the apparatus that accomplishes the method steps), or positively recite the subject matter that is being transformed (e.g. by identifying the material that is being changed to a different state).

Here, the claimed invention does not transform underlying subject matter to a different state or thing because it merely reschedules a production plan. Furthermore, the claimed process is not tied to another statutory category, such as a particular apparatus. The recited method is capable of being carried out entirely in the human mind. Thus, the claimed invention is not directed to patentable subject matter under § 101.

Claims 2-4, 6-8, 10-12, 14-16, and 18-20: Dependent claims 2-4, 6-8, 10-12, 14-16, and 18-20 are rejected for failing to remedy the deficiencies of the claims from which they depend.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang, “A Rolling Horizon Job Shop Rescheduling Strategy in the Dynamic Environment.”

Claim 1: Fang discloses:

- Receiving a first order having a period delivery demand, wherein the period delivery demand designates a specific period and directs a supplier to deliver products corresponding to the first order at an arbitrary delivery date planned by the supplier, and the arbitrary delivery date is before the end of the specific period (see page 228: section 2: item 4, disclosing that each job is assigned a due date according to the class it belongs to; page 228: section 3.1, disclosing a selection rule for determining which jobs to schedule, taking into account the urgency of the job; thus, the supplier determines when the product will be delivered in a period prior to the due date based on the product’s urgency); and
- receiving a second order with a pull-in demand, pushing out the first order, and directing capacity reserved for the first order to meet the second order (see page 230: section 3.5: items 1 and 3, disclosing that when a due date for a job changes, the urgency value for those jobs changes and they are given priority to replace other jobs; pages 230-232: section 4, specifically item 2 and figure 1, disclosing jobs with higher urgencies replacing those with lower urgencies).

Fang does not explicitly disclose a system for carrying out the disclosed methodology. However, Examiner takes Official Notice that it was well-known in the arts at the time the invention was made to automate processes. *See in re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958). Thus, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to automate the methodology of Fang by utilizing a system in order to increase efficiencies.

Furthermore, Examiner notes that the claim language is met by two commonly known techniques: minimizing total tardiness and rush order processing. In dynamic production planning, a production plan is continuously updated as new orders are received. Minimizing total tardiness is a common heuristic used to determine when to schedule newly received orders such that the number of late deliveries is minimized. This heuristic, in its most basic sense, replaces later-due jobs with earlier-due jobs. Also, rush orders are quite common in the manufacturing arts. A rush order is an order of high importance, which will replace previously scheduled jobs.

Examiner takes Official Notice that dynamic production planning, minimizing total tardiness, and rush order processing were all well-known in the production planning arts at the time the invention was made. The cited reference (Fang) is exemplary of these principles, particularly dynamic production planning and minimizing total tardiness.

Claim 2: Fang discloses allocating additional capacity for the first order (see pages 230-232: section 4, specifically item 2 and figure 1, disclosing replacing low-urgency jobs with high-urgency jobs, and reserving machine capacity for the pushed-out jobs).

Claim 3: Fang discloses a planning module to generate a new manufacturing planning schedule and delivery dates for the first order and second order (see page 231: figure 1; page 230: section 3.5).

Claim 4: Fang does not explicitly disclose wherein the first order further has a billing condition directing the supplier to generate a bill for the first order as late as possible.

Examiner takes Official Notice that it was well-known in the arts at the time the invention was made to gain the benefits of a “pay as late as possible” policy (due to the time value of money), and to give higher priority to customers who make payments first (e.g. reserving a spot in a queue for customers who pay first).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply well-known business practices to the methodology disclosed by Fang in order to give higher priority to customers who pay first (by pushing out customers with a “pay as late as possible” billing condition on their order). One of ordinary skill in the art would have been motivated to do so for the benefit of increased cash flows for the seller.

Also, Examiner notes that Applicant failed to traverse this finding of Official Notice, which was originally set forth in the previous Office action. Therefore, Examiner’s findings of Official Notice are taken to be admitted prior art. See MPEP § 2144.03 (C).

Claims 5-8: Claims 5-8 are substantially similar to claims 1-4 and are rejected under similar rationale.

Claims 9-12: Claims 9-12 are substantially similar to claims 1-4, except that in claim 9, the first order is pushed out if a production event occurs during product manufacturing in the supplier. Fang discloses this limitation (see page 228: section 2: item 6; page 229: section 3.2;

page 230: section 3.5: item 2; page 221: column 2: item 2). The remainder of the limitations in these claims are rejected under similar rationale as claims 1-4.

Claims 13-16: Claims 13-16 are substantially similar to claims 9-12 and are rejected under similar rationale.

Claims 17-20: Claims 17-20 are substantially similar to claims 9-12 and are rejected under similar rationale.

Claims 21-24: Claims 21-24 are substantially similar to claims 1-4 and are rejected under similar rationale.

Claims 25-28: Claims 25-28 are substantially similar to claims 9-12 and are rejected under similar rationale.

Claims 29-32: Claims 29-32 are substantially similar to claims 9-12 and are rejected under similar rationale.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Potts, C. N. and L. N. Van Wassenhove. "Single Machine Scheduling to Minimize Total Late Work." *Operations Research*. May/June 1992; Volume 40, Issue 3. pp 586-595.
- Miyahara (US 6,711,449), directed to exchanging production slots
- Barber (US 5,040,123), directed to a scheduler that minimizes lateness
- Wang (US 2005/0144056), directed to capacity reservation for different categories of customers, including categories for fixed and flexible delivery dates

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil R. Kardos whose telephone number is (571) 270-3443. The examiner can normally be reached on Monday through Friday from 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Neil R. Kardos
Examiner
Art Unit 3623

NRK
9/13/08
/Jonathan G. Sterrett/
Primary Examiner, Art Unit 3623